

February 17, 2017

Tom Moe  
USS Corporation  
P.O. Box 417  
8771 Park Ridge Dr  
Mountain Iron, MN 55768

RE: Project: USS MinnTac NPDES-LINE 3 wkly  
Pace Project No.: 1282659

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on February 08, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods  
melisa.woods@pacelabs.com  
Project Manager

Enclosures

cc: Cory Hertling  
Terri Sabetti, NTS



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

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### Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification UST-107

Alaska Certification UST-107

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1282659001	WS-002 Scrubber Make-up	Water	02/08/17 08:50	02/08/17 16:25
1282659002	WS-003 Thickener overflow	Water	02/08/17 08:40	02/08/17 16:25

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## SAMPLE ANALYTE COUNT

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1282659001	WS-002 Scrubber Make-up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1282659002	WS-003 Thickener overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V

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## ANALYTICAL RESULTS

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

Sample: <b>WS-002 Scrubber Make-up</b> Lab ID: <b>1282659001</b> Collected: 02/08/17 08:50    Received: 02/08/17 16:25    Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP, Lab Filtered</b> Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Calcium, Dissolved	<b>106</b>	mg/L	5.0	0.29	10	02/09/17 16:51	02/10/17 12:30	7440-70-2	
Magnesium, Dissolved	<b>227</b>	mg/L	5.0	0.67	10	02/09/17 16:51	02/10/17 12:30	7439-95-4	
Total Hardness, Dissolved	<b>1200</b>	mg/L	100	50.0	10	02/09/17 16:51	02/10/17 12:30		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	<b>890</b>	mg/L	20.0	10.0	10		02/15/17 13:23	14808-79-8	

Sample: <b>WS-003 Thickener overflow</b> Lab ID: <b>1282659002</b> Collected: 02/08/17 08:40    Received: 02/08/17 16:25    Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>200.7 MET ICP, Lab Filtered</b> Analytical Method: EPA 200.7    Preparation Method: EPA 200.7									
Calcium, Dissolved	<b>777</b>	mg/L	5.0	0.29	10	02/09/17 16:51	02/10/17 12:34	7440-70-2	
Magnesium, Dissolved	<b>184</b>	mg/L	5.0	0.67	10	02/09/17 16:51	02/10/17 12:34	7439-95-4	
Total Hardness, Dissolved	<b>2700</b>	mg/L	100	50.0	10	02/09/17 16:51	02/10/17 12:34		
<b>300.0 IC Anions 28 Days</b> Analytical Method: EPA 300.0									
Sulfate	<b>2150</b>	mg/L	40.0	20.0	20		02/15/17 21:46	14808-79-8	

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## QUALITY CONTROL DATA

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

QC Batch: 105673

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1282659001, 1282659002

METHOD BLANK: 419581

Matrix: Water

Associated Lab Samples: 1282659001, 1282659002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.029	02/10/17 11:08	
Magnesium, Dissolved	mg/L	ND	0.50	0.067	02/10/17 11:08	

LABORATORY CONTROL SAMPLE: 419582

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	47.8	96	85-115	
Magnesium, Dissolved	mg/L	50	47.7	95	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 419583

419584

Parameter	Units	1282514002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	43.3	50	50	92.3	92.1	98	98	70-130	0	20	
Magnesium, Dissolved	mg/L	107	50	50	155	155	95	96	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 419585

419586

Parameter	Units	1282693001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	305	50	50	339	342	67	74	70-130	1	20	P6
Magnesium, Dissolved	mg/L	113	50	50	154	155	81	83	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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## QUALITY CONTROL DATA

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

QC Batch: 106053

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1282659001

METHOD BLANK: 420780

Matrix: Water

Associated Lab Samples: 1282659001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	02/15/17 10:14	

LABORATORY CONTROL SAMPLE: 420781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	50.1	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 420782

420783

Parameter	Units	1282746001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	191	50	50	238	237	95	93	90-110	0	20	E

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 420784

420785

Parameter	Units	1282560001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	54.2	50	50	104	105	99	101	90-110	1	20	

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## QUALITY CONTROL DATA

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

QC Batch: 106112

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1282659002

METHOD BLANK: 420972

Matrix: Water

Associated Lab Samples: 1282659002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	02/15/17 18:37	

LABORATORY CONTROL SAMPLE: 420973

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	48.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 420974

420975

Parameter	Units	1282832001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	115	50	50	163	164	98	99	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 420976

420977

Parameter	Units	1282869002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	ND	250	250	261	262	100	101	90-110	0	20	

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## QUALIFIERS

Project: USS MinnTac NPDES-LINE 3 wkly

Pace Project No.: 1282659

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-V Pace Analytical Services - Virginia

### ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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## QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: USS MinnTac NPDES-LINE 3 wkly


Pace Project No.: 1282659

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1282659001	WS-002 Scrubber Make-up	EPA 200.7	105673	EPA 200.7	105732
1282659002	WS-003 Thickener overflow	EPA 200.7	105673	EPA 200.7	105732
1282659001	WS-002 Scrubber Make-up	EPA 300.0	106053		
1282659002	WS-003 Thickener overflow	EPA 300.0	106112		

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	Document Name: <b>Sample Condition Upon Receipt Form</b>	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: <b>F-VM-C-001-Rev.09</b>	Issuing Authority: Pace Virginia, Minnesota Quality Office

**Sample Condition  
Upon Receipt**

Client Name:

USS Corp

**WO# : 1282659**

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Other:  
☐ Commercial ☐ Pace ☐ Other:

PM: MMW

Due Date: 02/22/17

CLIENT: USS CORP

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No

Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other:

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808

Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.7

Cooler Temp Corrected °C: 2.0

Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA

Temp should be above freezing to 6°C

Correction Factor: +0.3

Date and Initials of Person Examining Contents: 2-8-17 MT

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>W1</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

**CLIENT NOTIFICATION/RESOLUTION**

Field Data Required? ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Date: 2-8-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)